

REMARKS

Claims 1-15 and 17-21 are in this application and are presented for consideration. By this amendment, claim 16 has been canceled with the subject matter combined into claim 1. Additional changes have been made to claim 1. Other minor formal changes have been made to the claims. New claims 17-21 have been added which are similar to claims 1-6 as now presented.

The drawings have been objected to because the reference sign mentioned in the description "enclosure I" is not in the drawings. Applicant has amended the specification to make reference to the co-pending application, filed on the same day, which is related. It is believed that no changes to the drawings are necessary.

The Abstract of the Disclosure has been objected to. Applicant presents a new abstract attached hereto and forming a part of this response.

Claim 7 has been objected to because of informalities. Applicant has now addressed these informalities. Should the Examiner determine that any issues remain with regard to the form of this application, Applicant requests that the Examiner telephone Applicant's attorney such that all issues may be resolved at an early time.

Claims 1-8 and 16 have been rejected as being anticipated by McNamee. Claims 1-7, 9 and 16 have been rejected as anticipated by Berger. Claims 1-7, 9-11, 15 and 16 have been rejected as being anticipated by Sasa et al. Further claims 12-14 have been rejected as being obvious based on Sasa in view of the secondary references Heimann et al. and Wurzel.

The invention provides a combination of features which is not taught and not suggested

by McNamee, Berger or Sasa et al. Further, the references as a whole fail to suggest the combination as claimed. None of the primary references (McNamee, Berger and Sasa et al.) teach or suggest a holding device comprising a support area with a trumpet-shaped extension. Specifically, none of the references disclose a support area provided with a continuous and uniform extension extending toward the free end of the holding device. This structure is highlighted in the claims such as claim 1 which highlights the trumpet-shaped structure and the continuous and uniform extension toward the free end. Claim 17 similarly highlights the structure including the trumpet-shaped extension having a radially widened outer end and radially narrowing as it extends continuously and uniformly toward the flexible hose and toward the holding portion.

The holding device according to McNamee comprises what appears to be a precisely cylindrical "support area" (28 Figure 1) that is provided with an inner thread. The pipe 12 itself is attached to the support area 28 via additional pieces (i.e., mating halves 18 and 20 respectively). The outer diameter of these are engaged with the inner thread of the support area 28 via a respective outer thread. The inner diameter of the halves 18, 20 are provided with a plurality of corrugations 24 mating with the external surface 26 of the pipe in order to axially hold the latter. This is similar to the annular ribs 3.1 of the device according to the invention. However, neither the support area 28 nor the halves 18, 20 comprise any trumpet like configuration which extends continuously and uniformly toward the free end of the device. The reference clearly fails to suggest the combination of features as claimed.

Berger neither teaches nor suggests a device comprising the features as presented in

Applicant's independent claims. The ring 30 according to Figures 3, 7 and 8 of Berger has an inner support area which is or appears exactly cylindrical. There is no teaching and no suggestion of the trumpet-shaped structure as claimed. Furthermore the combination of Berger does not teach and does not suggest support areas having a trumpet shaped extension as for example claimed and as shown and described in the application.

Sasa et al. discloses a coupling for holding a corrugated pipe. The attachment of the pipe to the coupling is similar to the one according to McNamee. Specifically, there is provided a ring shaped chuck 4 having an outer diameter comprising a circumferential groove portion 11 for the attachment to the coupling body 1 as well as an inner diameter. The inner diameter is provided with a plurality of corrugations 9, 10 mating with the external surface 7, 8 of the pipe 6 in order to axially hold the pipe 6. However, neither the chuck 4 nor the whole coupling body comprises any support area provided with a trumpet shaped extension as claimed.

Accordingly, the claims as presented clearly define over the prior art as a whole and none of the prior art anticipates this structure claimed.

Claims 12-14 have been rejected as being obvious based on the teachings of Sasa in view of Heimann and Wurzel. However, the references as a whole fail to teach and fail to suggest the combination claimed. The references do not direct the person of ordinary skill in the art toward the combination of features as specified in Applicant's claims. The invention provides a simply designed inexpensive relief aid for the flexible hose. Such a hose has relatively high mobility and the arrangement and device of the invention permit a narrow

bending radius (such as is required e.g. with respective flexible hoses for receiving supply lines, cables and so forth of an industrial robot). Even with this structure it still ensures a good support of the flexible hose in the case of lateral movement or bending to the side. The invention provides axial fixing of the end while reducing wear stresses on the hose without excessively stressing the hose components. Due to the support area of the holding device according to the invention, which is provided with a trumpet shaped extension extending continuously and uniformly toward the free end, the flexible hose is supported and accordingly relieved as distress and is consequently prevented from kinking in the area of high and particularly alternating bending load in the case of a lateral or bending side movement. Such bending movements are typical in relatively moving parts such as industrial robots and the like. The invention provides a significant improvement with a simple and straight forward arrangement. Further, if rotation simultaneously occurs, the hose may roll on the inner circumference of the trumpet shaped extension of the support area and no or at least less friction ( i.e. wear) occurs. As a result a much higher degree of stability and durability is obtained with the hose arrangement of the invention and the device as claimed.

The primary references fail to teach and fail to suggest an arrangement which addresses the problem solved. It has been noted that the recognition of the source of a problem is a useful consideration with regard to obviousness. As the prior art does not recognize the problem and there is no direction toward a solution, the prior art fails to suggest the combination claimed. The prior art as a whole fails to teach and suggest the "pipe" or "plastic tubing" (of the prior art) being flexible rather than rigid. This is significant with regard to the

device of claim 1 but also with regard to the arrangement of claim 17. Based on the teachings of the prior art a trumpet-shaped extension of the support area, as claimed according to the present invention, would not make any sense in conjunction with the known devices. As the references fail to recognize the source of the problem and disclose relatively rigid structures, there is clearly no suggestion to provide the combination as claimed. The prior art as a whole fails to make any suggestions with regard to effectively protecting a flexible hose from being kinked or cracked. Accordingly, Applicant respectfully requests that the Examiner reconsider the rejections in view of the revised claims and in view of the discussion above.

Respectfully submitted  
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